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1881.

THE WORKSHOP.

A Monthly Journal, devoted to Progress of the Useful Arts

edited by

L. EISENLOHR AND C. WEIGLE

Architects.

N⁰ 2.

EXPLANATION OF THE PLATES.

Plate 8.—Sitting-Room, design and execution by A. Pœssenbacher, Furniture Manufacturer and Decorator in Munich.

Our plate shows the artistically arranged fittings of a sitting-room, the wall decoration, furniture and accessories being designed in the Renaissance style of the end of the 16th and beginning of the 17th centuries.

Plate 9.—Door Furniture, manufactured in imitation of German Work of the 15th, 16th and 17th centuries, by E. Puls, Art Metal Worker in Berlin.

We reproduce here a series of excellent imitations of old hinges, lock plates, escutcheons and handles, cut out of brass or sheet-iron and embossed with the puncheon.

The return to the good old principle of marking the metal mountings by an appropriate decoration instead of hiding them, is a satisfactory sign of the revival of the taste for art metal work which is fast gaining ground everywhere.

Plate 10.—Bedstead, designed and manufactured by E. Carpentier, Cabinet Maker in Paris.

This rich piece of furniture is executed in red-stained walnut, the carvings being partly gilt.

Plate 11.—Jewellery, consisting of Head Ornament, Necklace and Earpendant by Froment-Meurice in Paris. Real size.

The scrolls and leaves, repoussé work in gold and delicately chased, are disposed and fixed upon a filigree ornament highly conventionalised after the manner of Grecian work of similar description.

Plate 12.—Episcopal Throne in the Chancel of Siena Cathedral by Bartol. Negroni, called Riccio. Date 1569.

Although a specimen of the late Italian sixteenth century work, this composition belongs to the best productions of those skilful designers and carvers in wood of the secento period. The architectural character of the outlines is indeed strongly developed, for the design follows the general tendency prevailing throughout this period, of providing cabinets, screens, stall fronts, etc., with all the showy arrangements of classic entablatures, columns and other details, wherever they are possible. Still the works of this age have a grace that is peculiarly their own, and in the hands of great artists they were treated with an extraordinary ease and vigor. So also in the present example which shows an exuberant richness of sculpture, graceful figures, light and flowing ornament, without producing the impression of disorder and want of repose. This is due to the good proportions and to the judicious and harmonious arrangement of the different parts which pervade the whole as an architectural composition.

Plate 13.—Capital and Cartouche of Pilaster, designed by Kayser and von Grossheim, Architects in Berlin.

These architectural features are executed in Bronze and enrich the Granit Pillars of a shop-front in Berlin.

Plate 14.—Ornaments for Marquetry in Wood, designed by Ihne and Stegmüller in Berlin.

VARIOUS.

Electric Lighting at the Woolwich Laboratory.

The introduction of the »Brush« system of electric lighting into the Royal Laboratory is regarded as a step towards the practical and economical adoption of electrical illumination for ordinary business purposes. With one engine of about 25 horse-power sixteen brilliant lights are supplied, any of which can be extinguished without interfering with the rest, whereas the two which they replace required two separate motors driven by two 10 horse-power engines. Twelve of the sixteen light are in the carpenters' shop, a building of 8000 superficial feet, and the remaining four are in a temporary workshop for painters adjacent. The distribution of the light is now much more perfect than formerly, and men can see to work in all parts of the buildings as clearly as by day. Attempts have been made to work the electric lights by connection with the steam shafting of the main factory, but the number of machines constantly casting on and off renders the pressure too variable for satisfactory results.

Iron.

Indian Portland Cement.

Portland cement is amongst the most recent of Indian manufactures. By a simple and almost purely mechanical process, a cement capable of bearing a pressure of 650 to 1000 pounds and upwards is produced from ordinary *kankar* combined with a certain proportion of purer limestone of local origin. A company has been formed, and works have been erected for the production of the cement at Sealdah. *Iron.*

New Substitute for Rubber.

This artificial composition, which answers the purpose of genuine caoutchouc or gutta percha, can be employed, according to Dankworth and Sanders, of St. Petersburg, either alone or in connection with other resinous substances. According to *Ackermann's Gewerbezeitung,* this new product affords an inexpensive means for a perfect isolation of wires for electrical purposes. The composition is elastic, tough, not so sensitive to external influences as caoutchouc or gutta percha, and is not injured by high pressure or high temperature. It is prepared in the following manner:

A quantity of coal tar oil, or equal parts of coal and wood tar oil, which is to constitute a third part of the whole mixture, is poured into a large kettle, together with an equal quantity of hemp oil, and is heated for several hours, either over steam or an open fire, to a temperature which lies between 252° and 288° Fah. (it should not exceed the latter), until the mass becomes so ductile that it can be drawn in long threads, and the remaining third, consisting of a quantity of linseed oil, which has been thickened by boiling, is then added.

With this composition from five to ten per cent of ozokerite and some spermaceti should be mixed. The mass is then heated again for some hours at the same temperature as above, and finally from seven to twelve per cent of sulphur are added. The mixture thus obtained is cast into forms and treated the same as caoutchouc.

The proportions of the three oils may be slightly varied according to the practical purposes for which the composition is to be used. *Scientific American.*

A Remarkable Clock

is thus described by an American exchange, with whom must rest the responsibility for the accuracy of the account, which latter makes certainly more than ordinary demands upon our credibility. Mr. Darius L. Goff, of Providence (R. I.), has a remarkable clock. It is at least 200 years old, but since becoming Mr. Goff's property has developed new powers. Occupying a position in the front hall of the house, it regulates the entire household. The front door, as it is opened and shut during the day, performs the work of winding. Within the dial is an ingenious mechanism by which the light in the front hall is turned up as darkness comes on, and again is lowered at the orthodox bedtime. At dawn, when it is time for the servants to bestir themselves, the clock rings a bell in the back hall summoning them to work. An hour later a bell in the front hall warns the family that it is time to rise, and, half-an-hour still later, the peal of this bell summons them to breakfast. Besides these arrangements, the clock is connected with another in Mr. Goff's sleeping-room, whereby the two are struck simultaneously. All these ingenious combinations, in which, of course, the aid of electricity is invoked, are the invention of Mr. Goff himself.

Incombustible Curtains.

At the Paris Exhibition two years ago, considerable attention was drawn to some muslin curtains to which a flame was constantly applied without setting them on fire. They were exhibited by M. Martin, of Paris, and we are now enabled to give the chemical composition of the substance which rendered them incombustible. It is: pure sulphate of ammonia, 80 parts; carbonate of ammonia, 25; boracic acid, 30; pure borax, 12; starch, 20, and distilled or pure water 1000 parts. The materials to be rendered fire-resisting are dipped in this solution while it is hot, so that they may be thoroughly impregnated with it, and when dried sufficiently, are ironed in the same way as ordinary starched fabrics. *Cassell's Magazine.*

Prizes for Designs for Furniture.

The Council of the Society of Arts, London, are trustees of the sum of £ 400, presented to them by the Owen Jones Memorial Committee, being the balance of the subscriptions to that fund, upon trust to expend the interest thereof in prizes to "students of the schools of art, who in annual competition produce the best designs for household furniture, carpets, wall papers and hangings, damask, chintzes, etc., regulated by the principles laid down by Owen Jones"; the prizes to "consist of a bound copy of Owen Jones' 'Principles of Design,' a bronze medal, and such sums of money as the fund admits of".

The prizes will be awarded on the results of the annual competition of the Science and Art Department. Competing designs must be marked "In Competition for the Owen Jones prizes".

The next award will be made in 1881, when six prizes are offered for competition, each prize to consist of a bound copy of Owen Jones' "Principles of Design", and the society's bronze medal. *Scientific American.*

New Phototype Process.

At the last meeting in Paris of the Society for the Encouragement of National Industry, a communication was received of a process discovered by M. Lenoir, for producing engraved plates from negatives photographed from nature.

The inventor illustrated his process before the council, preparing plates serving to show different styles of engraving, which were distributed among the audience.

M. Lenoir himself describes his process as follows:

"Until now, in order to obtain these negatives, a print was made in fatty inks by Poitevin's system. An impression was taken upon a sheet of transfer paper, which was placed upon a metal plate; after submitting it to the action of acid, it was inked several times under water. All this was difficult as well as uncertain. I have sought a means of operating directly upon the plate, without inking, and in this manner I set to work:

"I lightly coat a metal plate with albumen mixed with bichromate and carmine; this last is used not only as a dye, but it assists in the lifting of the film, on account of its solubility in ammonia. Gamboge and various resins answer the same purpose almost as well.

"The use of carmine is in the stripping off of the mass, because, the exposure taking place upon the upper surface, the carmine draws the albumen with it, more or less, according to exposure.

"When the film is stripped off, an image remains formed of albumen, in itself unable to resist the action of acids. It must, therefore, be rendered insoluble. There are two ways by which this may be effected; one is to cause the albumen to absorb a solution of gum lac, dissolved in hot water with borax; the other, and that which I prefer, is to plunge the plate, once stripped, in a solution of bichromate of potash, then drying at the heat of about 120°. The albumen has by this means acquired the required resistance to the action of acids. The plate has now to be engraved to give it a grain according to the amount of ink it should take up. Upon the unabsorbent and stripped plate a film is spread, consisting of a solution of bitumen of Judea and turpentine mixed with carbonate of lime. When plunged in acid, carbonic acid is liberated; it forms tiny canals through which the acid attacks the metal more or less quickly, by reason of the thickness of the albumen.

"But if strong acid be employed, the minute canals would be soon destroyed; I therefore use acid liquid composed of water acidulated with nitric and oxalic acids and alum. An oxalate of the metal is then formed on the sides of the canals, and causes them to adhere to the plate. The texture of the etching is more or less fine according to the length of time the albumen is allowed to absorb the acid. Minute hillocks remain in form of microscopical obelisks.

"In this state the plate is finished; it requires only to be dried, and is ready to be printed from immediately. No preliminary preparation is necessary, as the whole operation may be conducted in three hours." *Scientific American.*